

Appl. No. 10/667,960  
Atty. Docket No. CM2631MC  
Amdt. dated 29-Jun-2006  
Reply to Office Action of 29-Mar-2006  
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## REMARKS

### Amendments to the Claims

Claims 1-5 and 7-15 are pending in the present application. No claim amendments have been presently made. No additional claims fee is believed to be due.

### Remarks on Examiner's Response to Applicants' Previously Submitted Arguments

A. A *prima facie* case of obviousness has not been established because Dias does not recognize the chelant level as being a result-effective variable.

Regarding the rejection of claims 1 and 8-15 under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias"), the Examiner asserts that Applicants' previously submitted arguments are not persuasive. The Examiner disagrees with Applicants' previously submitted argument that a *prima facie* case of obviousness has not been established because Dias does not recognize the level of chelant to be result-effective with respect to oxidative damage to hair during bleaching or dyeing treatments.

More specifically, the Examiner asserts that Dias teaches compositions that contain chelants which may be present most preferably in an amount from 0.05% to 2%, and, that obviousness may still exist if a range disclosed in the prior art does not overlap with a claimed range but the ranges are close enough that one of ordinary skill in the art would not expect a difference in properties. Further, the Examiner asserts that a patent will not grant upon the optimization of a result-effective variable when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness.

Applicants respectfully submit that the Examiner, in the Office Action mailed March 29, 2006, has failed to address Applicants' specific point that Dias does not recognize the level of chelant to be result-effective with respect to oxidative damage to hair during bleaching or dyeing treatments, and, thus, a *prima facie* case of obviousness has not been established. The Examiner's reasons for this rejection, which are set forth in the previous Office Action mailed July 18, 2005, are based on the general principle that the optimization of a range within prior art conditions or through routine experimentation is not inventive. However, an underlying assumption of this general principle is that the

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variables subject to the alleged optimization are recognized in the prior art as *result-effective* variables.

In the present application, the Examiner generally assumes that the chelant level is a result-effective variable, and it is this assumption with which Applicants disagree. Applicants have previously presented, and have reiterated below, specific arguments in support of this position. However, the Examiner has failed to respond to these arguments with any particular reason or basis for assuming that Dias has recognized the chelant level as a result-effective variable. Instead, the Examiner again generally asserts that a patent will not grant upon the optimization of a result-effective variable when the optimization is obtained through routine experimentation. But, the Examiner provides no basis for his assumption that Dias recognizes the chelant level as a result-effective variable which can be optimized.

As discussed in more detail below, Dias characterizes chelants as an "optional component" of the hair coloring compositions of Dias. See Dias at column 23, line 63. A component which is just "optional" in a hair coloring composition cannot necessarily be interpreted to be result-effective with respect to certain properties relating to the intended use of that composition. Although Dias broadly discloses that chelants may be present as an optional component at a level of about 0.005% to about 20%, Dias does not recognize the level of chelant to be result-effective with respect to reducing oxidative damage to hair during bleaching or dyeing treatments, and, in turn, increasing the deposition of conditioning agents on the hair.

Therefore, a *prima facie* case of obviousness has not been established, and the burden has not shifted to Applicants to provide evidence of the criticality of the claimed range.

B. Applicants' claimed chelant level is not obvious because it is contrary to the accepted wisdom in the art.

Further regarding the rejection of claims 1 and 8-15 under 35 USC 103(a) as being unpatentable over Dias, Applicants' previously submitted arguments also presented the position that Applicants' claims are not obvious in view of Dias because Applicants' claimed level of chelant is contrary to the accepted wisdom in the art. This previously present position is discussed in more detail below.

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Applicants respectfully submit that the Examiner, in the Office Action mailed March 29, 2006, has failed to address this argument in any way. As provided in MPEP 2146 (Rev. 3, August 2005 at 2100-169), and in accord with *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986), proceeding contrary to accepted wisdom is evidence of nonobviousness. Thus, Applicants reiterate this argument, as discussed in more detail below, and respectfully request the Examiner to reconsider the present rejection in view of this evidence of nonobviousness.

Rejection Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al.

Claims 1 and 8-15 are rejected under 35 USC 103(a) as being obvious over US Patent No. 6,004,355 to Dias et al. ("Dias"). The Examiner asserts that Dias teaches a hair coloring composition comprising an oxidizing agent, conditioning agents such as silicones, and sequestrants (chelants) such as phosphonic acid derivatives, methyl cellulose as a thickener, and oxidative dye precursors, wherein the composition is an aqueous solution, and wherein the composition has a pH of 10. The Examiner also asserts that Dias teaches a kit comprising an oxidizing agent and one or more coloring agents.

The Examiner acknowledges that the Applicants' claimed compositions differ from the teachings of Dias by reciting a composition comprising a chelant in an amount of greater than 2% to about 5% [*sic*]. However, the Examiner asserts that Dias broadly discloses compositions comprising a chelant in an amount of 0.05% [*sic*] to 20%, 0.01% to 10%, and 0.05% to 2%. Thus, the Examiner concludes that it would be obvious to one of skill in the art that to formulate the Applicants' claimed compositions by optimizing the level of chelant in the compositions disclosed in Dias in order to get the maximum effective amount in the hair dyeing composition. Applicants respectfully traverse the present rejection based on the following comments.

A. A prima facie case of obviousness has not been established because Dias does not recognize the level of chelant as being a result-effective variable.

The Examiner has failed to establish a *prima facie* case of obviousness, and, thus, Applicants' claims are not obvious in view of Dias, because the level of chelant in a composition suitable for bleaching or dyeing hair is not recognized in the prior art as being a result-effective variable. Although "where the general conditions of a claim are

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disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *see also* MPEP 2144.05, a particular parameter must first be recognized in the prior art as a result-effective variable before the determination of the optimum or workable ranges of such variable might be characterized as routine experimentation, *see In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), *see also* MPEP 2144.05.

As previously presented, Applicants' claim 1 recites a composition comprising an oxidizing agent, a conditioning agent selected from the claimed group, and *greater than 2% to about 4% of a chelant selected from phosphonic acid type chelants as claimed*, and wherein the composition has a pH from about 9.5 to about 11. Applicants' compositions, which contain phosphonic acid type chelants at a level in the claimed range, provide a good lightening effect to hair during oxidative treatments, such as bleaching and dyeing, which are carried out in the pH range claimed by Applicants, yet result in less damage to the hair than that which occurs during the use of known oxidative treatment compositions which contain chelants at levels of no more than 2%. It is believed that the phosphonic acid type chelants, when present at a level in Applicants' claimed range, act to chelate environmental and intrinsic heavy metal ions which would otherwise react with the oxidizing agent to give harmful species, such as free radicals, which damage the hair by oxidizing the disulfide bonds of hair. It is further believed that non-cationic conditioning agents such as silicones deposit less efficiently on damaged hair. Therefore, the phosphonic acid type chelants, by reducing oxidative hair damage, in turn, increase the efficiency of the deposition of the conditioning agents.

The prior art, however, does not recognize the level of chelant in a composition suitable for bleaching or dyeing hair to be result-effective with respect to preventing damage to the hair during oxidative treatments, and, in turn, increasing the deposition of conditioning agents on the hair. Notably, Dias characterizes chelants as an "optional component" of the hair coloring compositions of Dias. *See* Dias at column 23, line 63. A component which is just "optional" in a hair coloring composition cannot necessarily be interpreted to be result-effective with respect to certain properties relating to the intended use of that composition. Further, Dias specifically teaches that "[s]uch sequestering agents [(i.e., chelants)] are valuable in hair coloring compositions as herein described for the delivery of controlled oxidising action as well as for the provision of good storage

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stability of the hair coloring products." Dias at column 24, lines 2-6. Dias mentions nothing about preventing damage to the hair through the use of certain levels of chelants.

For the purposes of controlled oxidizing action and good storage stability, which are recognized by Dias, chelants typically are included in hair coloring compositions at levels of 2% or less. Dias specifically teaches that chelants most preferably may be present in the hair coloring compositions from about 0.05% to about 2%. Moreover, every example composition in Dias comprises chelant at a level of 0.1%.

Although Dias broadly discloses that chelants may be present as an optional component at a level of about 0.005% to about 20%, Dias does not recognize the level of chelant to be result-effective with respect to reducing oxidative damage to hair during bleaching or dyeing treatments, and, in turn, increasing the deposition of conditioning agents on the hair. Consequently, as the prior art does not recognize the level of chelant in a composition suitable for bleaching or dyeing hair to be a result-effective variable, the determination of an optimum range within a broader range disclosed in the prior art cannot be considered to be routine experimentation.

Additionally, Dias provides no teaching or suggestion that particularly phosphonic acid type chelants are preferred over any of the other disclosed chelants. Dias broadly discloses a number of chelants as suitable optional components. While some phosphonic acid type chelants are among the list of numerous chelants disclosed, one of ordinary skill in the art would not be motivated, upon reading the disclosure of Dias, to select phosphonic acid type chelants over any other type of chelant disclosed, let alone such phosphonic acid type chelants at the level claimed by Applicants.

Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

B. Applicants' claimed level of chelant is contrary to the accepted wisdom in the art and, thus, the Applicants' claims are not obvious in view of Dias.

Alternatively, Applicants' claims are not obvious in view of Dias because Applicants' claimed level of chelant is contrary to the accepted wisdom in the art. The totality of the prior art must be considered, and proceeding contrary to accepted wisdom in the art is evidence of nonobviousness. *See In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685 (Fed. Cir. 1986); *see also* MPEP 2145. The court in *Hedges* reversed the decision of the Board of Appeals and Patent Interferences, which had affirmed the examiner's rejection under 35 U.S.C. 103 of *Hedges*' claims. *Hedges*' claims were

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directed to a particular chemical reaction which occurred at a high temperature. In reaching its decision to reverse, the court noted that the references cited against Hedges' claims "all suggest that lower temperatures of reaction are preferable." *Id.* Thus, because Hedges' claimed reaction temperature was contrary to the temperatures which were preferred in the art, the obviousness rejection was reversed.

As stated above, Applicants' claim 1 recites a composition comprising, *inter alia*, a phosphonic acid type chelant, wherein the chelant is present at a level of *greater than 2% to about 4%* by weight of the composition. In contrast, low levels of chelants, typically around 0.1%, are routinely used as stabilizers or preservatives in various oxidizing compositions for treating hair. Consistent with this general idea, Dias, while broadly discloses that chelants may be present as an optional component at a level of about 0.005% to about 20%, teaches that chelants *most preferably* may be present in the hair coloring compositions *from about 0.05% to about 2%*. Further, every example composition in Dias comprises chelant at a level of 0.1%.

Thus, similar to the claims at issue in *Hedges*, Applicants' claims are nonobvious over the prior art because they require a level chelant which is contrary to the accepted wisdom in the art.

The Examiner has failed to establish a *prima facie* case of obviousness. Alternatively, Applicants' claims are not obvious in view of Dias because Applicants' claimed level of chelant is contrary to the accepted wisdom in the art. Therefore, Applicants' claims 1 and 8-15 are novel and nonobvious over Dias.

Rejection Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al. in view of US Patent No. 3,542,918 to Berth et al.

Claims 2-5 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias") in view of US Patent No. 3,542,918 to Berth et al. ("Berth"). The Examiner asserts that Dias, as described above, teaches a hair coloring composition comprising an oxidizing agent, conditioning agents such as silicones, and sequestrants (chelants) such as phosphonic acid derivatives. The Examiner acknowledges that Dias does not teach at least one of the chelants of the formulae (I) to (IV) and the species of Applicants' claims.

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However, the Examiner asserts that Berth teaches a composition comprising chelant compounds which are similar to Applicants' claimed chelants. Thus, the Examiner concludes that it would have been obvious to one of skill in the art to incorporate the chelants taught in Berth into the compositions of Dias because Berth discloses that aminopolyphosphonic acids and derivatives are used in hair treatment compositions to protect hair during bleaching and/or dyeing, and that such compositions would have similar properties to those claimed by Applicants, absent unexpected results. Applicants respectfully traverse the present rejection based on the following comments.

The combination of Dias and Berth does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. See MPEP 2143.03. Applicants' claims 2-5 contain the limitations of claim 1. Applicants' claim 1, as previously presented, recites a composition comprising an oxidizing agent, a conditioning agent selected from the claimed group, and *greater than 2% to about 4% of a chelant selected from phosphonic acid type chelants as claimed*, wherein the composition has a pH from about 9.5 to about 11. As discussed above, Applicants' compositions containing a phosphonic acid type chelants at the claimed levels result in less damage to the hair than that which occurs during the use of known oxidative treatment compositions which contain chelants at levels of no more than 2%.

In contrast to Applicants' claimed compositions, both Dias and Berth fail to teach or suggest with sufficient specificity a composition comprising greater than 2 wt.% to about 4 wt.% of a chelant selected from phosphonic acid type chelants. As discussed above, even though Dias broadly discloses that chelants may be present as an optional component at a level of about 0.005% to about 20%, Dias indicates that the preferred chelant level is from about 0.05% to about 2%. Further, every example composition in Dias comprises a chelant at a level of only 0.1%. Likewise, while Berth broadly discloses that polyphosphonic acids and derivatives thereof may be used at a level of 0.1% to 10%, Berth teaches that the preferred level is 0.1% to 2%. As in Dias, the composition of Example 1 of Berth comprises only 0.1% of a chelant, which in Berth is an acylation product of phosphorous acid. Therefore, the Examiner has failed to establish a *prima facie* case of obviousness.

Alternatively, Applicants' claims are not obvious in view of the combination of Dias and Berth because Applicants' claimed level of chelant is contrary to the accepted

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wisdom in the art. *See Hedges*, 783 F.2d at 1041. Berth provides a clear statement of the accepted wisdom in the art with respect to the level of chelant used in hair dyeing or bleaching compositions. Notably, after Berth states that the preferred level is 0.1% to 2%, Berth specifically teaches that "[l]arger quantities can be used, however, it has been found that no practical advantages are gained thereby" (emphasis added). *See Berth* at column 3, lines 2-3. Thus, despite the broad ranges disclosed in Dias and Berth, it would not be obvious to one of ordinary skill in the art to use a polyphosphonic acid chelant at a level of greater than 2% in view of Berth's specific teaching that there are no advantages in doing so.

The combination of Dias and Berth does not establish a *prima facie* case of obviousness for Applicants' claims 2-5. Alternatively, Applicants' claims are not obvious in view of the combination of Dias and Berth because Applicants' claimed level of chelant is contrary to the accepted wisdom in the art. Accordingly, Applicants' claims 2-5 are novel and nonobvious over the combination of Dias and Berth.

Rejection Under 35 USC 103(a) Over US Patent No. 6,004,355 to Dias et al. in view of US Patent No. 4,138,478 to Reese et al.

Claim 7 is rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,004,355 to Dias et al. ("Dias") in view of US Patent No. 4,138,478 to Reese et al. ("Reese"). The Examiner asserts that Dias teaches hair coloring compositions, as described above, wherein the compositions are thickened aqueous compositions. The Examiner acknowledges that Dias does not teach a hair treatment composition in the form of an oil-in-water emulsion.

The Examiner then asserts that Reese teaches a hair bleaching or dyeing composition wherein the composition is in the form of a fluid bath, dry powder, paste, cream emulsions of oil-in-water. The Examiner further asserts that Reese also teaches hair color composition which comprises an oxidizing agent and a diphosphonic compound. Thus, the Examiner concludes that it would have been obvious to one of skill in the art to formulate the composition of Dias in the form of an oil-in-water emulsion as taught by Reese because Reese describes different forms of hair treating compositions. Applicants respectfully traverse the present rejection based on the following comments.



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The combination of Dias and Reese does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. See MPEP 2143.03. Applicants' claim 7 contains the limitations of claim 1. Applicants' claim 1, as previously presented, recites a composition comprising an oxidizing agent, a conditioning agent selected from the claimed group, and *greater than 2% to about 4% of a chelant selected from phosphonic acid type chelants as claimed*, wherein the composition has a pH from about 9.5 to about 11. As discussed above, Applicants' compositions containing phosphonic acid type chelants at the claimed levels result in less damage to the hair than that which occurs during the use of known oxidative treatment compositions which contain chelants at levels of no more than 2%.

In contrast to Applicants' claimed compositions, both Dias and Reese fail to teach or suggest a composition comprising greater than 2 wt.% to about 4 wt.% of a chelant selected from phosphonic acid type chelants. As discussed above, even though Dias broadly discloses that chelants may be present as an optional component at a level of about 0.005% to about 20%, Dias indicates that the preferred chelant level is from about 0.05% to about 2%. Further, every example composition in Dias comprises a chelant at a level of only 0.1%. Likewise, while Reese broadly discloses that diphosphonic compounds may be used at a level of 0.01% to 10%, Reese teaches that the preferred level is 0.1% to 2%. As in Dias, the compositions of Examples 1, 2, and 3 of Reese comprise only 0.1% of a chelant, which in Reese is a diphosphonic compound.

Alternatively, Applicants' claims are not obvious in view of the combination of Dias and Reese because Applicants' claimed level of chelant is contrary to the accepted wisdom in the art. See *Hedges*, 783 F.2d at 1041. Similarly to Berth, discussed above, Reese provides a clear statement of the accepted wisdom in the art with respect to the level of chelant used in hair dyeing or bleaching compositions. Notably, after Reese states that the preferred level is 0.1% to 2%, Reese specifically teaches that "[l]arger amounts can be used if desired . . . but such larger amounts provide virtually no advantage" (emphasis added). See Reese at column 3, lines 19-26. Thus, despite the broad ranges disclosed in Dias and Reese, it would not be obvious to one of ordinary skill in the art to use a phosphonic acid chelant at a level of greater than 2% in view of Reese's specific teaching that there are no advantages in doing so.

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The combination of Dias and Reese does not establish a *prima facie* case of obviousness for Applicants' claim 7. Alternatively, Applicants' claims are not obvious in view of the combination of Dias and Reese because Applicants' claimed level of chelant is contrary to the accepted wisdom in the art. Accordingly, Applicants' claim 7 is novel and nonobvious over the combination of Dias and Reese.

### CONCLUSION

In light of the remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicant respectfully requests reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1-5 and 7-15.

Respectfully submitted,

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